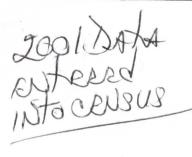
Back Bay National Wildlife Refuge 2001 Marshbird Callback Survey



Survey Method

Dike route

Last year's selection of a series of 18 points chosen to give a continuous series of points along the refuge impoundments was again used this year. The 18 sites on the survey begin just south of the headquarters complex, proceed along the west dike past the entrance to False Cape State Park, and come back along the east dike with one site on the south cross dike. Each site was easy to relocate since the latitude and longitude of each site had been marked with a GPS reading from a Magellan GPS 315. A copy of GPS readings for each of those sites as well as the map of the route used in the 18 site 2000 survey is included in this report since the sites are identical to those used last year. No new habitat site maps were created for this route, since the habitat has not changed appreciably since last year.

The route was surveyed by bicycle as it was last year. No difficulties with this method were encountered. The official ten minute Coastal Callback tape was again used with the boom box. The official callback evaluation form was also used this year. Each survey was covered in approximately four and one-half hours. The dates of the surveys were May 1, May 23, and June 6, 2001. The first and the third surveys were covered from point 1 to point 18, while the second survey was covered in reverse order, from point 18 to point 1. The start times for all surveys was early morning, and all the surveys met the recommended weather criteria. I was the only observer for each survey.

North Bay route

A new canoe-based route was laid out to survey the northern section of the refuge. The route begins at the canal near Sandbridge Realty on Sandbridge road, progresses south along the canal, into Hell Point Creek, out into North Bay and east toward Sandbridge beach. The Magellan GPS 315 was used to choose the sites insuring that each site was at least 400m from the previous site. The longitude and latitude of each site was recorded. A table of these data is included as well as a map of the area showing the location of the sites.

The route was surveyed by electric motor powered canoe on May 15, May 31, and June 19, 2001. The canoe was the property of BBNWR, but the electric motor was loaned to the surveyor for the surveys. Because of the longer travel time between points as compared to the dike route, only 14 sites were visited during each of the survey. All three surveys were covered from point 1 to point 14 with no surveys run in the reverse direction. The start time for all the

surveys was early morning, and all the surveys met the recommended weather criteria. On the first and last survey I was assisted by Rachel Cliche of the BBNWR staff. On the second survey John Gallegos accompanied me and pointed out the more important plant communities present at each site.

Results

The results of each of the surveys is given in the appendix along with the original data sheets. There are no new habitat site maps for the dike route. The habitat site maps for the North Bay route are included with the original data sheets.

Dike Route

The cumulative list of species recorded for this route for the two survey years is 107 species. The significant increase in this total is due to the inclusion of an early May survey in 2001, which allows more migrants to be recorded. The total number of individuals recorded for each of the target species is as follows with the first number indicating this year's total and the second number last year's total: King Rail (24, 25), Virginia Rail (1, 0), American Coot (2, 14), Pied-billed Grebe (9, 18), Sora (10, 1), Wood Duck (23, 31), Common Moorhen (1, 3), Least Bittern (8, 5). In addition 2 American Bitterns were recorded on the early May survey. The impact of instituting the early May survey is also apparent in the numbers for Sora, and Virginia Rail was only recorded on the early May survey. Least Bittern was recorded this year on all three surveys in about equal numbers. Common Moorhen was recorded only on the first survey. There were no observations of or responses from Black Rail. A summary of each of the three surveys is included in a table in the appendix.

A brief analysis of the callbacks shows that of the target species, only King Rail and Sora responded well during taped calls of their own species, although the correlation is far from perfect. Several other target species gave callbacks that were not well correlated with the species' taped call. These numbers are summarized in table in the appendix.

North Bay route

A total of 56 species were observed on this new route. This number is significantly lower than the 83 species recorded during the first year of the dike route survey. This difference results primarily from the difference in the varieties of habitats along the two routes, being much less varied along the North Bay route. Of more importance to this survey, however, is that only two of the target species were recorded during the three canoe surveys. The total number of individuals for those two species were: 14 Least Bittern and 5 King Rails. It should be noted that even though there are only 14 points on this route, the number of Least Bitterns is higher than that of the 18 point dike route. The Least Bitterns seem to make good use of the *phragmites*

which grows in abundance along this route. A summary of each of the three surveys is included in a table in the appendix.

Recommendations

My recommendations for next year are to continue both the 18 point dike route survey and the 14 point North Bay route survey. I think three surveys are adequate for each route, but since there are only 14 points in the North Bay route, it may have to be run an additional year to gather enough data to satisfy the statistical criteria. Next year both surveys will be run using a schedule which begins with the first survey around May 1 to increase the chances of sampling migrant marshbirds like Sora, Virginia Rail, and American Bittern. The second survey should be during late May and the last during mid June.

For the dike route survey the issuance of a passkey to get onto the refuge before it is officially opened worked out very well.

Although a nighttime survey was not attempted in 2001, I think it is important to include one for each survey route next year. It should be run around May 1 to probe for the presence of Black Rails.

The major problem encountered this year was in trying to complete an 18 point canoe survey in a reasonable length of time. Because of the travel time required between points, only 14 points were included in the North Bay route. The logistics for launching the canoe were also a problem since two people were required for the launch. The canoe used was adequate, if heavy. However, the refuge needs to budget for and purchase an electric motor and backup for the canoe as well as the batteries necessary to power it. It was not possible this year to run the North Bay route in the reverse direction because there was no easy access to launch the canoe. Next year a convenient access point for the canoe needs to be found near the northeast end of the present route so the route can be run in reverse to meet the specifications of the protocol.

The biggest problem with the survey has to do with how accurately the census gives an indication of the population of the target marshbirds. The tape helps locate and census some species, but is of little value for others. For example although King Rails will call in response to their own call, they will respond as well as to the calls of other rails or simply call on their own. Least Bitterns, on the other hand, respond less well to the tape than do the King Rails. Most of the Least Bitterns counted were either actually seen, usually in flight, or were simply calling on their own. In a couple of instances, their calling was stopped by the tape playback. The ultimate question is how to extrapolate these counts to get a figure for the refuge's marshbird population

Summary of Marshbird Callback Survey - 2001

Dike Route

	Survey 1	Survey 2	Survey 3
Date of survey	5/1/01	5/23/01	6/6/01
# points surveyed	18	18	18
Starting time	05:45:00	05:40:00	05:35:00
Ending time	10:35:00	10:30:00	10:11:00
Route direction	N-S	S-N	N-S
Wind	W 3-5	N 5-7	WSW 3-5
Cloud cover	0%	50%	50%
Starting temp	58F	70F	70F
Ending temp	74F	68F	79F
Pied-billed Grebe	6	3	
American Bittern	2		
Least Bittern	3	2	3
Wood Duck	6	9	8
King Rail	8	6	10
Virginia Rail	1		
Sora	10		
Common Moorhen	1		
American Coot	2		
Total num spec seen	75	64	59

North Bay Route

	Survey 1	Survey 2	Survey 3
Date of survey	5/15/01	5/31/01	6/19/01
# points surveyed	14	14	14
Starting time	06:00:00	06:05:00	06:09:00
Ending time	10:38:00	10:18:00	10:08:00
Route direction	N-S	N-S	N-S
Wind	NNW 3-5	N-E 5-7	E 3
Cloud cover	30-50%	10-30%	0-10%
Starting temp	52F	55F	na
Ending temp	na	70F	na
Least Bittern	1	9	4
Wood Duck			
King Rail	1	3	1
Sora			
Common Moorhen			
American Coot			
Total num spec seen	38	37	36

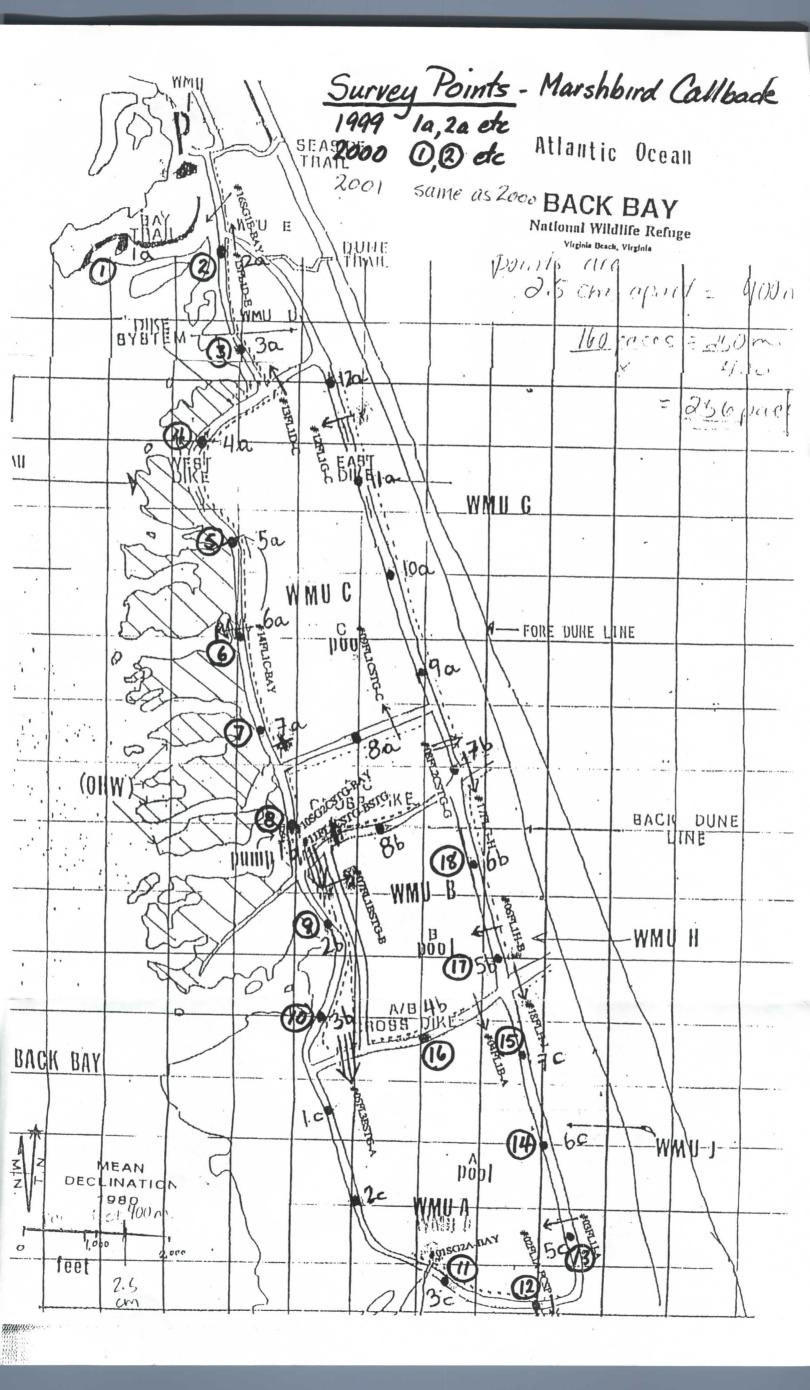
Summary of responses by target species to Coastal Callback Tape

Dike Route

	Responded during passive period	Responded to taped call of its own species	Responded to taped call of another species	Recorded visually with no vocalization
Pied-billed Grebe	1	2		6
American Bittern			1	1
Least Bittern	5	1	1	1
King Rail	6	9	5	4
Virginia Rail		1		
Sora		6	4	
Common Moorhen				1
American Coot	2			

North Bay Route

	Responded during passive period	Responded to taped call of its own species	Responded to taped call of another species	Recorded visually with no vocalization
Least Bittern	5		2	7
King Rail	1	1	3	



GPS Locations of 2001 Marshbird Callback - Dike Route

Site #	Description	GPS#	Latitude	Longitude
1	Bay Trail	LMK002	36:40.15	75:55.14
2	D pool fishing pier	LMK003	36:40.10	75:54.85
3	West dike above cross	LMK004	36:39.92	75:54.78
4	West dike at curve	LMK005	36:39.69	75:54.96
5	West dike opp hack tower	LMK006	36:39.48	75:54.83
6	West dike west inlet 2	LMK007	36:39.33	75:54.85
7	West dike west inlet 3	LMK008	36:39.11	75:54.80
8	West dike water control	LMK014	36:38.85	75:54.74
9	West dike west inlet 3	LMK015	36:38.68	75:54.69
10	West dike west inlet 4	LMK016	36:38.52	75:54.64
11	West dike water control	LMK024	36:37.91	75:54.34
12	False Cape S.P. entrance	LMK025	36:37.85	75:53.97
13	East dike between two ponds	LMK026	36:38.02	75:53.95
14	East dike	LMK027	36:38.21	75:54.00
15	East dike below A/B cross dike	LMK028	36:38.40	75:54.07
16	Middle A/B cross dike	LMK017	36:38.44	75:54.33
17	East dike above A/B cross dike	LMK018	36:38.64	75:54.16
18	East dike at curve	LMK019	36:38.79	75:54.22

The locations of the survey points are identical to those used during the 2000 Dike Route survey.

Marshbird Callback Survey May 15, 2001 North Bay Route

CENNUM#	6247	110	49	1250	KI	×4	10	-11	11	56 Pt 10			1	1011	1
(CV) 9001 //	Pt 1	Pt 2	Dt 3	Dt 1	D+ 5	Dt 6	Dt 7	S.7	55	54	0/	58	57	6260	
TARGET SPECIES		1 . 2	110	114	rt 3	rt 0	Pt /	Pt 0	Pl 9	Pt 10	Pt 11	Pt 12	Pt 13	Pt 14	Totals
Pied-billed Grebe							-								
American Bittern															
Least Bittern						- 4				-					
Wood Duck						1									1
King Rail		1													
Virginia Rail															1
Sora															
Common Moorhen															
American Coot	-														
OTHER SPECIES															
Red-throated Loon															
Northern Gannet															
Brown Pelican															
Double-crested Cormorant		2													2
Great Blue Heron				1	1										2
Great Egret															
Snowy Egret															
Little Blue Heron															
Tricolored Heron															
Cattle Egret															
Green-backed Heron							1								
Yellow-crowned Night-Heron															
White Ibis															
Glossy Ibis															
Mute Swan															
Turkey Vulture															
Canada Goose	1	2													3
American Black Duck															
Mallard									2						2
American Wigeon															
Blue-winged Teal															
Bald Eagle															
Osprey				,		1								2	3
Bobwhite															- 0
Black-bellied Plover															
Semi-palmated Plover												2	1		3
Killdeer													- '		3
Greater Yellowlegs															
Lesser Yellowlegs					-								1		4
Solitary Sandpiper		1	-										- 1		1
Willet															1
Spotted Sandpiper															
opolica Sariupipei															

Marshbird Callback Survey May 15, 2001 North Bay Route

	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5	Pt 6	Pt 7	Pt 8	Pt 9	Pt 10	Pt 11	Pt 12	Pt 13	Pt 14	Totals
Short-billed Dowitcher															
Semi-palmated Sandpiper															
Least Sandpiper							1							4	5
shorebird sp															
Laughing Gull								1				5			6
Ring-billed Gull															
Herring Gull															
Caspian Tern															
Royal Tern															
Common Tern															
Forster's Tern															
Black Skimmer															
Mourning Dove															
Yellow-billed Cuckoo															
Great Horned Owl															
Chuck-wills-widow															
Ruby-throated Hummingbird															
Belted Kingfisher				-											
Red-bellied Woodpecker					1										1
Downy Woodpecker															
Yellow-shafted Flicker			1	1		1			1						4
Pileated Woodpecker				·					•						
Eastern Wood-Pewee															
Great Crested Flycatcher															
Eastern Kingbird			1		2			1							4
Purple Martin															
Tree Swallow				10	40		12		4		1	5			72
N. Rough-winged Swallow					- 10				•		'				12
Barn Swallow												1		2	3
Blue Jay															
American Crow	1											1			2
Fish Crow												·			
Carolina Chickadee		1													1
Carolina Wren				1				1							2
Sedge Wren															
Marsh Wren										1		1	3	1	6
Blue-gray Gnatcatcher		1								-					1
Eastern Bluebird		- '								1					1
American Robin		1								1					1
Gray Catbird															
Northern Mockingbird															
Brown Thrasher															
Cedar Waxwing															

Marshbird Callback Survey May 15, 2001 North Bay Route

	Pt 1	Pt 2	Pt 3	B Pt	4	Pt :	5	Pt 6	Pt 7	Pt 8	8	Pt 9	Pt 10	Pt 11	Pt 12	Pt 13	Pt 14	Totals
White-eyed Vireo	1										+			7		1110		101413
Red-eyed Vireo											+							- '
European Starling											+		1					1
Northern Parula	1										+		•					1
Yellow Warbler		1									+							1
Yellow-rumped Warbler											\top							
Pine Warbler	1				1						\top							1
Prairie Warbler											+							
Blackpoll Warbler											+							
Common Yellowthroat	1	1	3	3	1	2	2		1		+		1	1	1	1		13
Yellow-breasted Chat		1			1						+				'	- 1		2
Cardinal	1						\top				1							2
Blue Grosbeak					\top		\top				+							
Indigo Bunting					1		1				+		1					- 1
Rufous-sided Towhee					1		1				+							
Chipping Sparrow				1			+				+							
Field Sparrow					+		+				+							
White-crowned Sparrow					+		+			-	+	-						
Song Sparrow					+		+	-			+							
Swamp Sparrow					\top		+				+	-						
Bobolink				1	+		+				+	-						
Red-winged Blackbird		х	Х	1	x)	,	х	Х	>	+	X						
Eastern Meadowlark					1		+		^		+		X	X		X	X	X
Boat-tailed Grackle				1	+		+				+							
Common Grackle				1	1	1	1				+		1		1	1	4	
Brown-headed Cowbird	1			-	1		+				+						4	9
Orchard Oriole					+		+-				+							2
House Finch			2	1	+		+			2	-							
American Goldfinch	1				+		+	1			-	1						4
Total Number species seen	9	11	5		9	7	,	5	4	6	-	5	7	3	0			3
Tanibar oposios scori									4			3		3	8	6	6	38

Marshbird Callback Survey May 31, 2001 North Bay Route

CENNUM #	6261	62	63	64	65	66	67	68	69	6270	71	75	7.2	6274	1
	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5	Pt 6	Pt 7	Pt 8	Pt 9	Pt 10	Pt 11	Pt 12	73 Pt 13	Pt 14	Totals
TARGET SPECIES										1			1 (10	1 (14	Totals
Pied-billed Grebe															
American Bittern															
Least Bittern		1	1	2	2		1	1	1						9
Wood Duck								·	-						
King Rail		1		1									1		3
Virginia Rail	-														
Sora												-			
Common Moorhen															
American Coot															
OTHER SPECIES															
Red-throated Loon															
Northern Gannet															
Brown Pelican															
Double-crested Cormorant															
Great Blue Heron												1			1
Great Egret												- '			
Snowy Egret															
Little Blue Heron															
Tricolored Heron															
Cattle Egret															
Green-backed Heron															
Yellow-crowned Night-Heron															
White Ibis															
Glossy Ibis															
Mute Swan		_											-		
Turkey Vulture									1				5		6
Canada Goose									-						- 0
American Black Duck															
Mallard		1	1												2
American Wigeon															
Blue-winged Teal															
Bald Eagle		1													- 1
Osprey						1	1	1	2				1		6
Bobwhite															0
Black-bellied Plover															
Semi-palmated Plover															
Killdeer													2	-	2
Greater Yellowlegs													2		2
Lesser Yellowlegs															
Solitary Sandpiper															
Willet															
Spotted Sandpiper												-	-		

Marshbird Callback Survey May 31, 2001 North Bay Route

	Pt 1	Pt 2	Pt :	3 Pt	4 P1	5	Pt 6	Pt 7	Pt 8	Pt	9	Pt 10	Pt	11	Pt	12 P	t 13	Pt 14	Totals
Cedar Waxwing											-	1110		•			. 10	1 (1-4	Totals
White-eyed Vireo											1			-		-			
Red-eyed Vireo										-	1			-		+			
European Starling					1	_	2	1			2			-		-			5
Northern Parula					1			·			-			-		_			
Yellow Warbler					1						+			+		-			
Yellow-rumped Warbler					1					_	+			\dashv		-			
Pine Warbler	1				1	\neg					+			+		-			- 4
Prairie Warbler					1	\neg					+			+		-			
Blackpoll Warbler						7					+			+		-			
Common Yellowthroat		2	-	1 2		4	2		1		2	1		1		1			17
Yellow-breasted Chat	1	1		-					<u> </u>		-			-					3
Cardinal	2	1							1		+			-					4
Blue Grosbeak		1				\forall					+			+			-		1
Indigo Bunting											+			+		-			
Rufous-sided Towhee	1										+			+					1
Chipping Sparrow						1					1			+			-		
Field Sparrow						1					+			+					
White-crowned Sparrow											+			_		-			
Song Sparrow				1		1					1			+					1
Swamp Sparrow					1						+			+		-	-		
Bobolink					1	_					+			_		-	-		
Red-winged Blackbird		х	>	()		х	X	X			x	x		х		х	х	X	X
Eastern Meadowlark														^		^		^	^
Boat-tailed Grackle						\neg		1			+			+		_			1
Common Grackle	1				1	3		2	2		+			4		1	6	2	21
Brown-headed Cowbird					1	+					+					-	- 0		21
Orchard Oriole			1	1	1	\top					+			+		-			2
House Finch			·	1	1	\top			6		+			+		-			6
American Goldfinch					1	1					+			+		-			1
Total Number species seen	10	12	6	7		8	7	6	11		8	2		6		7	7	3	37

Marshbird Callback Survey May 31, 2001 North Bay Route

	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5	Pt 6	Pt 7	Pt 8	Pt 9	Pt 10	Pt 11	Pt 12	Pt 13	Pt 14	Totals
Cedar Waxwing															
White-eyed Vireo															
Red-eyed Vireo															
European Starling						2	1		2						5
Northern Parula															
Yellow Warbler															
Yellow-rumped Warbler															
Pine Warbler	1														1
Prairie Warbler															
Blackpoll Warbler															
Common Yellowthroat		2	1	2	4	2		1	2	1	1	1			17
Yellow-breasted Chat	1	1		1											3
Cardinal	2	1						1							4
Blue Grosbeak		1													1
Indigo Bunting															
Rufous-sided Towhee	1														1
Chipping Sparrow															
Field Sparrow															
White-crowned Sparrow															
Song Sparrow									1						1
Swamp Sparrow															
Bobolink															
Red-winged Blackbird		Х	Х	Х	Х	Х	X		Х	X	X	X	X	X	X
Eastern Meadowlark															
Boat-tailed Grackle							1								1
Common Grackle	1				3		2	2			4	1	6	2	21
Brown-headed Cowbird															
Orchard Oriole			1	1											2
House Finch								6							6
American Goldfinch					1										1
Total Number species seen	10	12	6	7	8	7	6	11	8	2	6	7	7	3	37

Marshbird Callback Survey June 19, 2001 North Bay Route

CENNUM#	6275	76	77	78	79	6280	81	81	83	24	85	86	87	6288	
CENNUM#	Pt 1	Pt 2	Pt 3	Pt 4	Pt 5	Pt 6	Pt 7	Pt 8	83 Pt 9	84 Pt 10	Pt 11	Pt 12	87 Pt 13	Pt 14	Total
TARGET SPECIES															
Pied-billed Grebe															
American Bittern															
Least Bittern			1			1	1		1						4
Wood Duck															
King Rail			1												1
Virginia Rail															
Sora															
Common Moorhen															
American Coot															
OTHER SPECIES															
Red-throated Loon															
Northern Gannet															
Brown Pelican															
Double-crested Cormorant															
Great Blue Heron														1	1
Great Egret															
Snowy Egret															
Little Blue Heron															
Tricolored Heron															
Cattle Egret															
Green-backed Heron	1														1
Yellow-crowned Night-Heron															
White Ibis															
Glossy Ibis															
Mute Swan															
Turkey Vulture														2	2
Canada Goose				1							4				5
American Black Duck															
Mallard															
American Wigeon															
Blue-winged Teal															
Bald Eagle															
Osprey						1	1	1		1	1		1	2	8
Bobwhite															
Black-bellied Plover															
Semi-palmated Plover															
Killdeer															
Greater Yellowlegs															
Lesser Yellowlegs															
Solitary Sandpiper															
Willet															
Spotted Sandpiper															

Marshbird Callback Survey June 19, 2001 North Bay Route

Totals	pf 14	Et 19	Pf 12	11 Jd	01 1q	6 1 4	8 1 9	7 1 4	9 1 d	5 14	⊅ łd	E 14	2 1d	1 1d	Short-hold Downstoper
											-			-	Short-billed Dowitcher Semi-palmated Sandpiper
					1			-	-	-	-	-	-		Least Sandpiper
						+	-	1	-			-	-		shorebird sp
						-	-	-	-		-	-	-		Laughing Gull
						I.	-	-	-	-	-	-	-	-	Ring-billed Gull
						1		-	-	-	-	-	-	-	Herring Gull
							1	-	-	-		-	-		Caspian Tern
							1		-	+	-	-	-	-	Royal Tern
							1			-	-	-	-	-	Common Tern
L				L			1	-	-	-	-	-	-	-	Forster's Tern
7	L		L	2				-	1	-	-	-	-	-	Black Skimmer
							1	-	-	-	-			-	Mourning Dove
l T		1					-	1		-	-	-	-	-	Yellow-billed Cuckoo
								+	+	-	-	-	-	-	Great Horned Owl
								1		-	-		-	-	Chuck-wills-widow
									1	-		-	-	-	Suby-throated Hummingbird
							1			1		-	-	-	Selfed Kingfisher
												-			Paring Myoodpoolses
												-		-	Red-bellied Woodpecker
												-	-		Oowny Woodpecker
l										L					Kellow-shafted Flicker
												1			Sileated Woodpecker
															astern Wood-Pewee
		-												1	Sreat Crested Flycatcher
b											L	1	2	1	satern Kingbird
12	2	7	2	3	Þ		1	2	3	7					ourple Martin
															ree Swallow
															Wollsw2 begin-winged Swallow
6	1				L		3		7	2		1			Sarn Swallow
														_	Slue Jay
1					L							-		-	merican Crow
											1		_	-	ish Crow
1											_	-		L	Sarolina Chickadee
											_				sroling Wren
l												_		L	Sarolina Wren
										-				-	edge Wren
9	L	7	L		L	L						-			Marsh Wren
1													_	1.	ilue-gray Gnatcatcher
													_	_	sastern Bluebird
												-	-	_	merican Robin
1							L		_			-	-	-	ы Саfbird lorthern Mockingbird
														_	rown Thrasher

Marshbird Callback Survey June 19, 2001 North Bay Route

36	8	1	9	9	6	9	6	9	8	6	9	8	1	10	Total Number species seen
3							2		L						American Goldfinch
															House Finch
1		-	-									L			Orchard Oriole
77		-											L		Brown-headed Cowbird
72	-	3			l l		Þ		L	Þ		3	3	3	Common Grackle
V	-	7	1							1					Soat-tailed Grackle
X	-	X	- V	-											astern Meadowlark
^		^	X	X	X	X	X	X	X	X	X	X	X		Red-winged Blackbird
															Sobolink
		-													Swamp Sparrow
	-	-													Song Sparrow
		-		-											White-crowned Sparrow
		-		_											wonsq2 blai-
1				-		_									Chipping Sparrow
1		-	-											1	Pufous-sided Towhee
•	-	-	-										L		gnifing ogibni
10	-		+	-		-									Blue Grosbeak
b	-		-	_		L	2			1	1	3		2	Cardinal
91	L	-	-		1	ļ		1					L	1	Yellow-breasted Chat
J V	1	-	1		3	L	1	7		L	L	1	3		Common Yellowthroat
L	-		-			-	-								Blackpoll Warbler
	-	-		-	-	-								1	Prothonotary Warbler
L		-	-	+		-									Prairie Warbler
r	-	-	-							1					Pine Warbler
	-	-	-	-		-		-							Yellow-rumped Warbler
		-	-	-		-	-	-							Yellow Warbler
I.	-		-			-		-	ļ.,						Northern Parula
	-	-	-	-	-	-	-	-	L						European Starling
ļ			-	-	-	-	-	-	-						Red-eyed Vireo
		-	-		-	-	-	-	-	-				1	White-eyed Vireo
Totals	14	Pt 13	Pf 12	11 19	01.31	6 1 1	0.3:								Cedar Waxwing
-	7770	61 10	CF +Q	FF 44	01 19	6 1 4	8 19	7 19	9 1 4	5 19	₽ 1d	Pf 3	Pf 2	₽ 1d	

GPS Locations of 2001 Marshbird Callback - North Bay Route

Longitude	Latitude	#Sd5	Description	Site
75 57.34	36:44.43	LMK046	Canal at edge of woods	LN
84.78:87	36:44.25	LMK047	Canal	ZN
98.78:87	36:44.06	LMK048	Canal	EN
69.73:37	38.54:35	LMK049	Canal	ÞΝ
08.75:67	36:43.66	LMK050	Canal	9N
06.73:37	36:43.44	LMK051	Canal	9N
26.73:37	36:43,23	LMK052	Canal	ZN
75:58.03	36:43.02	FWK023	Canal near intersection with Hell Point Creek	8N
56.73:37	36:42.82	LMK054	Hell Point Creek near mouth	6N
27.72:67	36.42.98	LMK055	North Bay shoreline	OIN
54.73:87	36.42.95	LMK056	North Bay shoreline	LLN
65.73:37	71.54:35	LMK057	West shore of cove off North Bay	NIS
10.73:37	72.64:36	LMK058	East shore of cove off North Bay (duck blind)	ELN
06.93:37	36:43.08	TWK026	North Bay near osprey nest	PLN

